

The impact of the energy sector on planetary health

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on behalf of Clean, Affordable and Secure Energy (CASE) for Southeast Asia

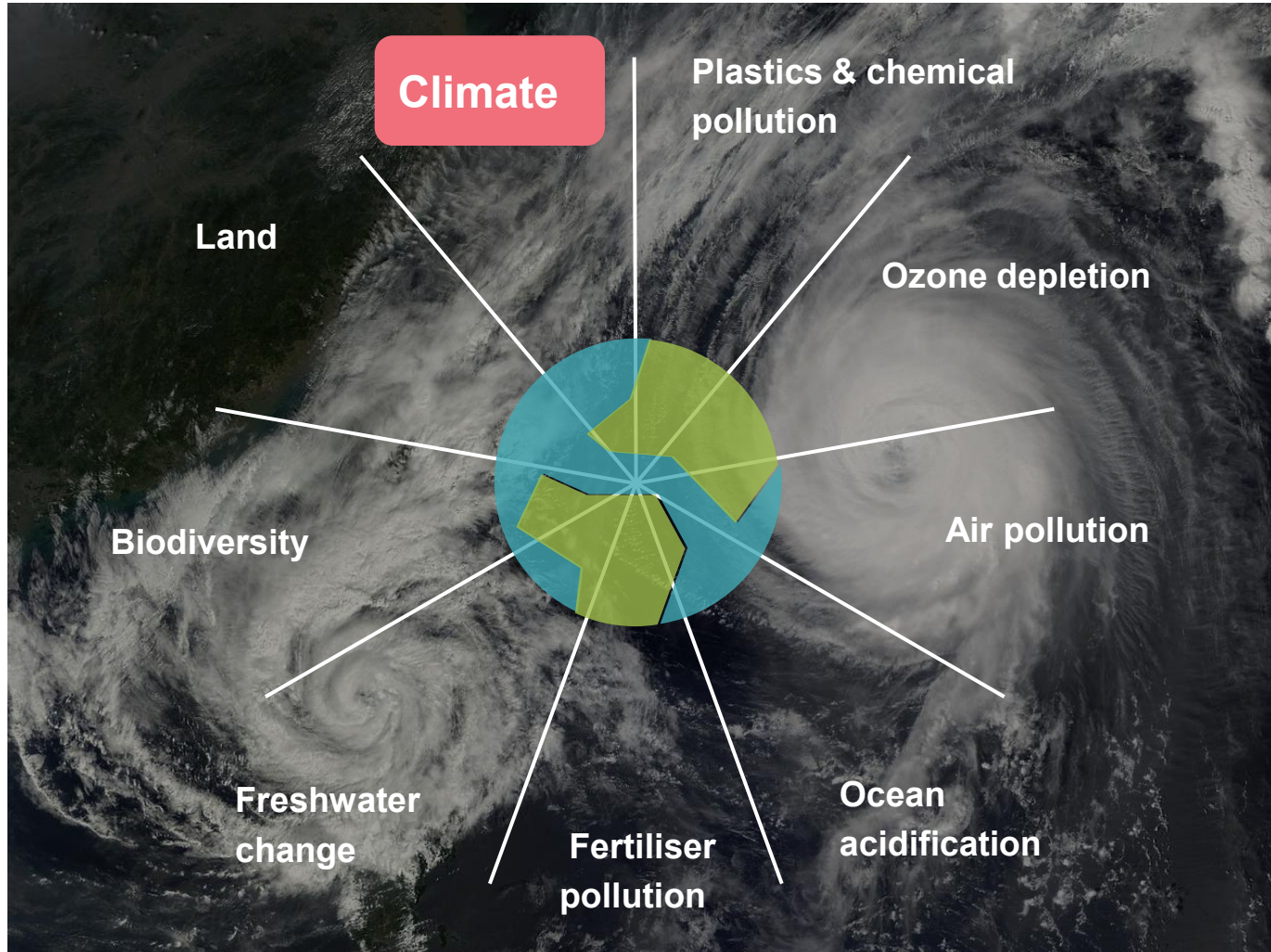


What is the state of the living planet?

How is the energy system damaging the planet?

What would a better energy system look like?

Elements of planetary health

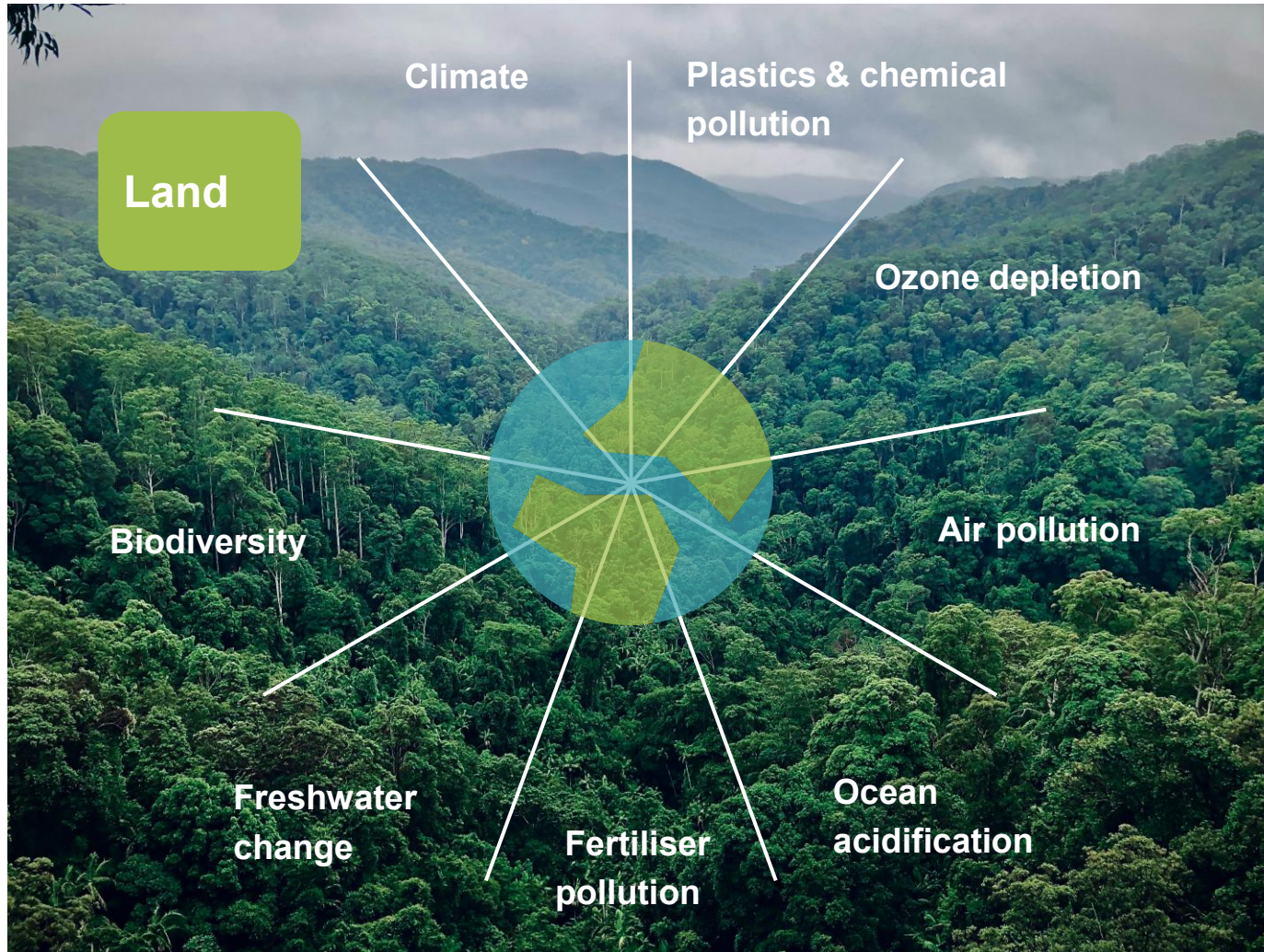


9 interrelated systems that define the health of the living planet

Climate

- Climate is the foundation of life. It controls what plants can grow, what animals can live, and shapes how humans can exist
- It is the heat, the cold, the winds, the storms, the wildfires, the droughts, the floods and the sea level...

Elements of planetary health



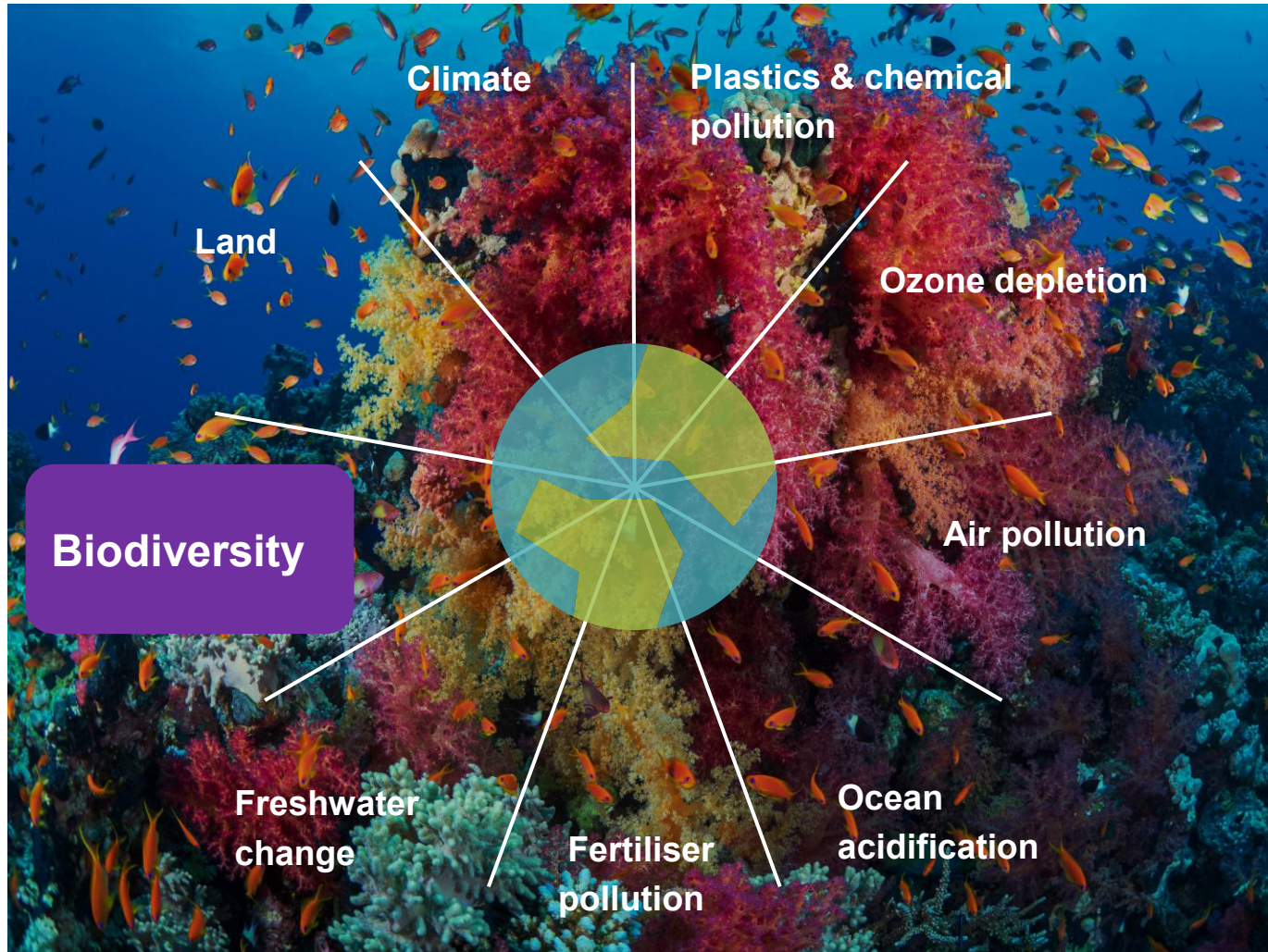
9 interrelated systems that define the health of the living planet

Land

- Land is home to 86% of total mass of living things on Earth, mainly plants. 22% of all animals live on land.
- Land provides around 97% human food supply.

Elements of planetary health

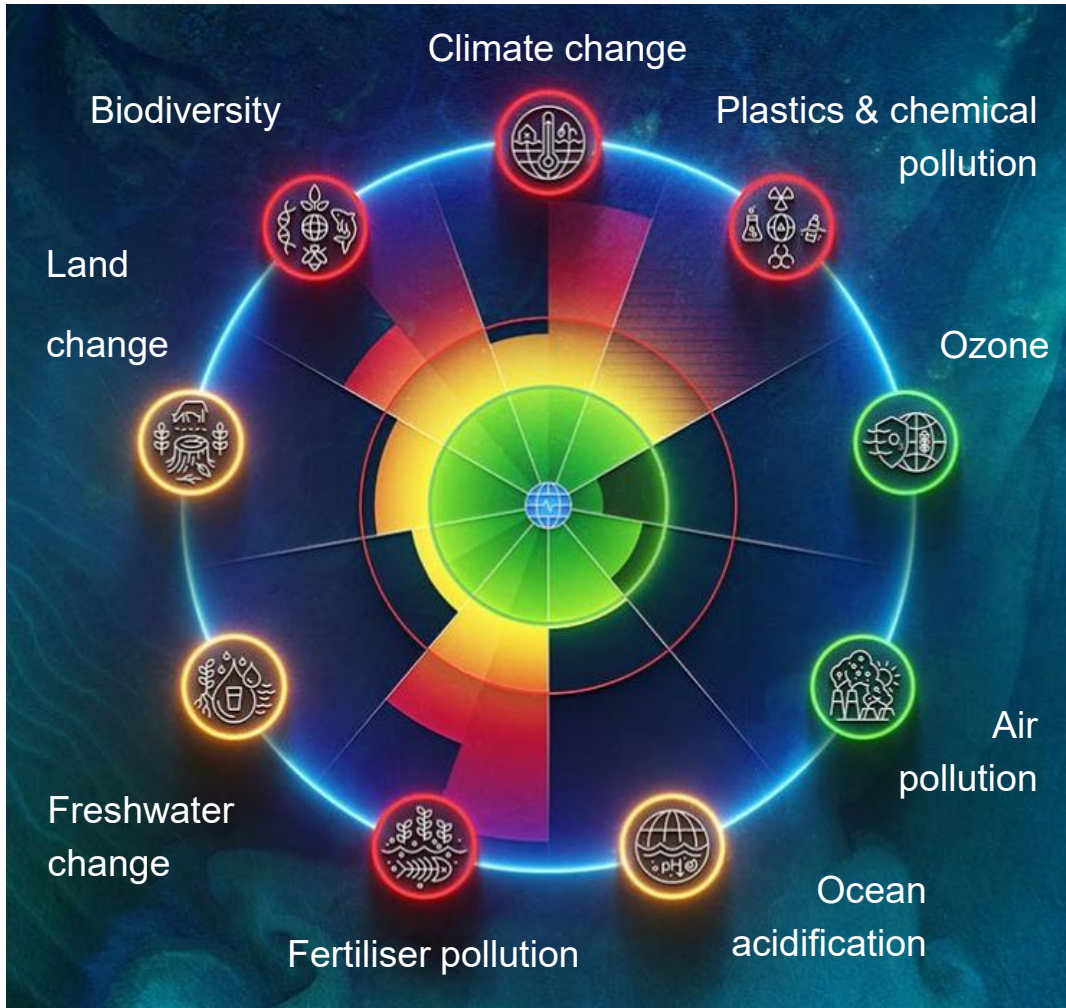
9 interrelated systems that define the health of the living planet



Biodiversity

- Provides food, water, medicines, and maintains the ecosystems that regulate climate, purify air and water, and protect against natural disasters.
- Intangible value of life: abundant complex life on Earth in an extremely inhospitable universe.

Is our planet healthy?



- Planetary boundaries define safe operating space where Earth systems support human welfare and social development
- Planetary Health Check 2025: 7 Earth systems now outside safe zone
- Climate, land-change, biodiversity, freshwater, fertiliser pollution, ocean acidification, plastics and chemical pollution
- Outlook: severe challenges for human welfare and life on Earth. Extreme weather, water and food insecurity.
- Need to transform the system as fast as possible! We can do it if we work together!

What role does the energy sector play now?

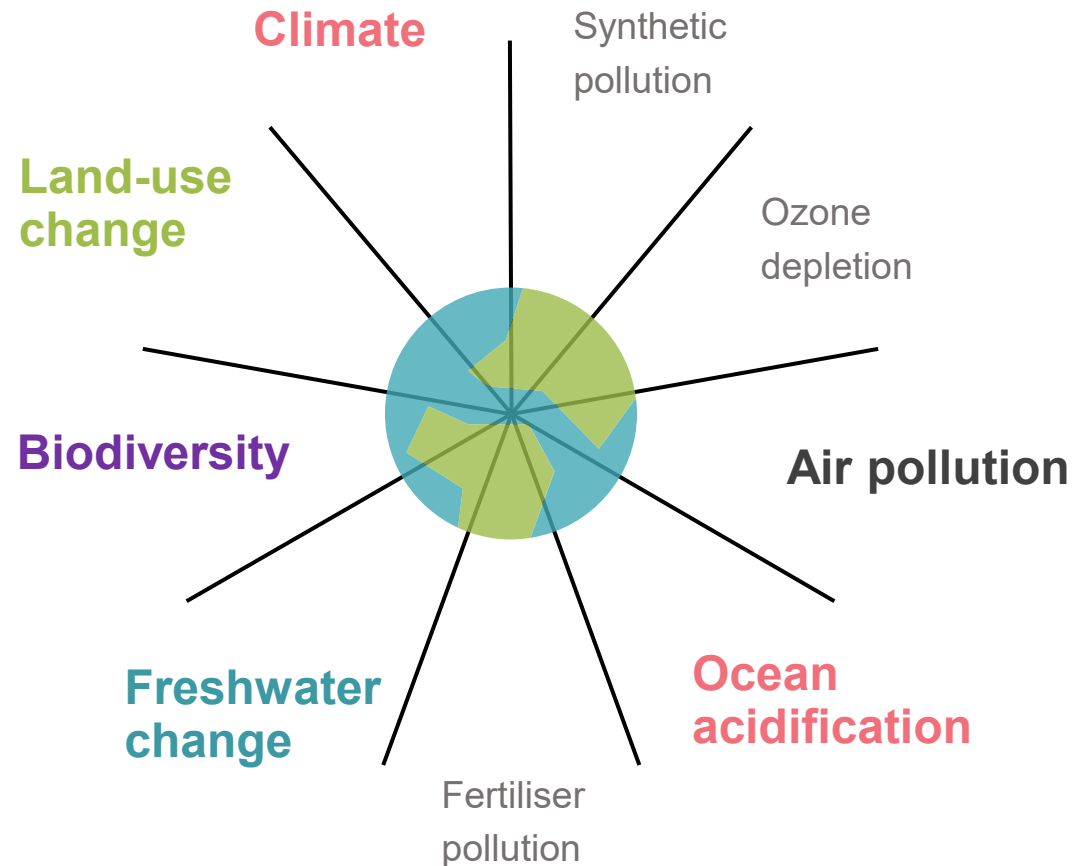


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- Mines (coal, minerals)
- Hydropower plants
- Bioenergy (palm oil)
- Ground PV, wind turbines

- Habitat destruction (land-use change)
- Pollution (land, water, air)
- Climate change & ocean acidification

- Thermal power plants
20% global freshwater withdrawals
- Indirectly through climate change and deforestation



- Energy sector 76% global GHG in 2023
- Plus land-use change from mines, hydro, bioenergy

- Burning fossil fuels for electricity, cars, trucks, planes, motorbikes, cooking, heating, ...

What would a better energy system look like?



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Climate

- Minimise GHGs (incl. land-use emissions from deforestation)
- Prioritise RE + minimise land-use change GHG emissions (deforestation)

Land system & biodiversity

- Prioritise RE with low land-use like roof-top and floating solar PV
- Electrify to reduce demand for biofuels (land use + competition with food)

Freshwater change

- Prioritise RE with low water use (solar PV)
- Minimise thermal power plants (20% global freshwater withdrawals)



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